Test Report
Rate of Spread of Tack Coat

Project Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
Client	Executive Engineer, Project Division Yalahanka
Code No.	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
Test Type	Bituminous Concrete (BC)
Contractor	M/s KRIDL
Location	At Site
Material	Bitumen
Sample No	1
Date	28-May-2018

Sl. No.	Determination	Unit	Test No 1		
			Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.655	1.652	1.653
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.014	0.011	0.012
6	Rate of spread (d/a)	kg / m^2	0.350	0.275	0.300
7	Average	kg / m^2	0.308		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.308 kg / m2

Note:

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For Mecadez Core Technologies Private Limited

Authorised Signature

Test Report
Rate of Spread of Tack Coat

Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
	Executive Engineer, Project Division Yalahanka
	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
	Bituminous Concrete (BC)
	M/s KRIDL
	At Site
	Bitumen
	2
	29-May-2018

Sl. No.	Determination	Unit	Test No 1		
			Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.654	1.651	1.652
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.013	0.01	0.011
6	Rate of spread (d/a)	kg / m^2	0.325	0.25	0.275
7	Average	kg / m^2	0.283		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.283 kg / m2

Remarks:

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Test Report
Rate of Spread of Tack Coat

	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
	Executive Engineer, Project Division Yalahanka
	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
	Bituminous Concrete (BC)
	M/s KRIDL
	At Site
	Bitumen
	3
	28-May-2018

Determination	Unit	Test No 1		
		Longitudinal Distribution		
Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
Area of the Plate (a)	m^2	0.04	0.04	0.04
Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
Final weight of plate after application of Tack Coat (c)	kg	1.654	1.652	1.653
Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.013	0.011	0.012
Rate of spread (d/a)	kg / m^2	0.325	0.275	0.3
Average	kg / m^2	0.317		
Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Result: Rate of Spread of Prime Coat / Tack Coat is: 0.317 kg / m2

above are based on the tests carried out on the sample at site.
to the items tested.

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Test Report
Rate of Spread of Tack Coat

Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
	Executive Engineer, Project Division Yalahanka
	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
	Bituminous Concrete (BC)
	M/s KRIDL
	At Site
	Bitumen
	4
	27-May-2018

Sl. No.	Determination	Unit	Test No 1		
			Longitudinal Distribution		
1	Size of Plate (mxn)	m^2	0.2x0.2	0.2x0.2	0.2x0.2
2	Area of the Plate (a)	m^2	0.04	0.04	0.04
3	Initial weight of the empty Plate (b)	kg	1.641	1.641	1.641
4	Final weight of plate after application of Tack Coat (c)	kg	1.655	1.652	1.651
5	Weight of Prime coat/ Tack Coat (d = c-b)	kg	0.014	0.011	0.01
6	Rate of spread (d/a)	kg / m^2	0.350	0.275	0.250
7	Average	kg / m^2	0.292		
8	Specified Limit	kg / m^2	Not less than 0.25 kg / m^2		

Results: Rate of Spread of Prime Coat / Tack Coat is: 0.292 kg / m2

Note:

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Test Report
Aggregate Impact Value

Project Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
Client	Executive Engineer, Project Division Yalahanka
Job No	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
Work Type	Bituminous Concrete (BC)
Contractor	M/s KRIDL
Test Method	IS : 2386 (Part - 4) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	At Site
Material	Coarse Aggregate
Sample No	1
Date	27-May-2018

Sl. No.	Determination	Unit	Trails	
1	Weight of empty cylinder, w1	gm	960	960
2	Weight of container filled with Aggregate, w2	gm	1308	1304
3	Weight of the Aggregate before compaction, (w2 - w1) = w3	gm	348	344
4	Weight of the sample passing through 2.36 mm IS sieves after Impact, w4	gm	85	82
5	Weight of the sample retained on 2.36 mm IS sieve after Impact, w5	gm	263	262
6	Aggregate Impact Value (w4 / w3)x100	%	24.43	23.84
7	Specified Limit	%	24	

Results: Average Aggregate Impact Value: **24.14** %

Note:

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Test Report
Aggregate Particle Shape

Work Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
Client	Executive Engineer, Project Division Yalahanka
Code	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
Mix Type	Bituminous Concrete (BC)
Contractor	M/s KRIDL
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Source	Hot Mix Plant
Material	Coarse Aggregates
Sample No	1
Date	27-May-2018

I.S. Sieves Size		Weight of Retained Sample on Each Sieve (minimum 200 Pieces) (gm)	Flakiness Index		Elongation Index	
Passing/Through IS Sieve (mm)	Retained on IS Sieves (mm)		Thickness Gauge	Weight of Aggregates in each fraction passing on thickness gauges (gm)	Length Gauge	Weight of Aggregates in Fraction retained on length gauges (gm)
63	50	0	33.9	0	-	0
50	40	0	27	0	81	0
40	25	0	19.5	0	58.5	0
31.5	25	0	16.95	0	-	0
25	20	1556	13.5	236	40.5	254
20	16	1443	10.8	122	32.4	149
16	12.5	953	8.55	148	25.6	155
12.5	10	465	6.75	67	20.2	73
10	6.3	235	4.89	57	14.7	64
	SW	4652	SWf	630	SWe	695

Flakiness Index	13.54	%
Elongation Index	14.94	%

Combined Flakiness and Elongation Indices : 28.48 %

Remarks: Maximum allowable Combined Flakiness and Elongation Indices for Bituminous Concrete is 35%.

Note:

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Test Report
Aggregate Particle Shape

Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
	Executive Engineer, Project Division Yalahanka
	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
Type	Bituminous Concrete (BC)
	M/s KRIDL
Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
	Hot Mix Plant
	Coarse Aggregates
No	2
	28-May-2018

I.S. Sieves Size		Weight of Retained Sample on Each Sieve (minimum 200 Pieces) (gm)	Flakiness Index		Elongation Index	
Passing through IS Sieves (mm)	Retained on IS Sieves (mm)		Thickness Gauge	Weight of Aggregates in each fraction passing on thickness gauges (gm)	Length Gauge	Weight of Aggregates in Fraction retained on length gauges (gm)
	50	0	33.9	0	-	0
	40	0	27	0	81	0
	25	0	19.5	0	58.5	0
31.5	25	0	16.95	0	-	0
25	20	1566	13.5	246	40.5	264
20	16	1430	10.8	109	32.4	136
16	12.5	963	8.55	158	25.6	165
12.5	10	475	6.75	77	20.2	83
10	6.3	245	4.89	67	14.7	74
	SW	4679	SWf	657	SWe	722

Index	14.04	%
Index	15.43	%

Flakiness and Elongation Indices : 29.47 %

Maximum allowable Combined Flakiness and Elongation Indices for Bituminous Concrete is 35%.

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Test Report

Aggregate Stripping Value

Project Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
Client	Executive Engineer, Project Division Yalahanka
Work No	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
Work Type	Bituminous Concrete (BC)
Contractor	M/s KRIDL
Test Method	IS : 6241 - 1971 & Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Hot Mix Plant
Material	Coarse Aggregates / Bitumen
Sample No	1
Date	27-May-2018
Type of Aggregate	Coarse Aggregate
Type of Binder	60 / 70 Grade
Percentage of Binder Used	5% by weight
Weight of Aggregate	200 gms
Weight of Binder	10 gms
Temperature of water bath	40^0C

Observation Number	Stripping Percentage	Average Percentage	Average Retained Coating (%)
1	3.6	3.5	96.5
2	3.4		
3	3.5		

Comments: **Minimum allowable Aggregate Stripping Value for Bituminous Concrete is 95%**

Note:

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Test Report
Aggregate Stripping Value

Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
	Executive Engineer, Project Division Yalahanka
	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
	Bituminous Concrete (BC)
	M/s KRIDL
	IS : 6241 - 1971 & Specification for Road & Bridge Works, MORT&H, Revision V.
	Hot Mix Plant
	Coarse Aggregates / Bitumen
	1
	27-May-2018
gregate	Coarse Aggregate
	60 / 70 Grade
Binder Used	5% by weight
Aggregate	200 gms
Binder	10 gms
water bath	40^{0}C

Number	Stripping Percentage	Average Percentage	Average Retained Coating (%)
1	3.6	3.5	96.5
2	3.4		
3	3.5		

Minimum allowable Aggregate Stripping Value for Bituminous Concrete is

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Test Report

Specific Gravity and Water Absorption

Project Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
Client	Executive Engineer, Project Division Yalahanka
Job No	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
Mix Type	Bituminous Concrete (BC)
Contractor	M/s KRIDL
Test Method	IS: 2386 (Part - 111) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Hot Mix Plant
Material	Coarse Aggregates
Sample No	1
Date	27-May-2018

Sl. No.	Particulars	Computations	Test Numbers		Mean
			Test 1	Test 2	
1	Weight of Empty Basket Immersed in Water	W_1 g	761	763	
2	water	W_2g	2024	2022	
3	Weight of Saturated Aggregate in water	W_sg = W_2- W_1	1263	1259	
4	Weight of saturated surface dry aggregate in Air	W_3 g	2059	2047	
5	Aggregate	W_3- W_s	796	788	
6	Weight of Oven dried Aggregate	W_4g	2020	2018	
7	Specific Gravity	W_4/(W_3- W_s)	2.54	2.56	2.55
8	Apparent Specific Gravity	W_4/(W_4- W_s)	2.67	2.66	2.66
9	Water Absorption	(W_4- W_3)*100/ W_4	1.93	1.44	1.69

Comments: Maximum allowable Aggregate Water Absorption value for Bituminous Concrete is 2.0%.

Note:

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Test Report
Aggregate Gradation

Project Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
Client	Executive Engineer, Project Division Yalahanka
Job No	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
Mix Type	Bituminous Concrete (BC)
Contractor	M/s KRIDL
Test Method	IS : 2386 (Part - 1) 1963 & Specification for Road & Bridge Works, MORT&H, Rev. V.
Location	Hot Mix Plant
Material	Coarse Aggregates
Sample No	1
Date	27-May-2018

Weight of Sample: 4000 gms

Sl. No.	I.S. Sieve size (mm)	Weight Retained (gm)	Percentage of weight Retained (%)	Cumulative Percentage of weight retained	Cumulative % of Passing		Remarks
					Test Result	Gradation Limits as per MORT&H	
1	19.00	0	0.00	0.00	100.00	100	Gradation satisfies the MORT&H Grade ll Specification for Bituminous Concrete
2	13.20	676	16.90	16.90	83.10	72-100	
3	9.50	433	10.83	27.73	72.28	70-88	
4	4.75	235	5.88	33.60	66.40	53-71	
5	2.36	476	11.90	45.50	54.50	42-58	
6	1.18	340	8.50	54.00	46.00	34-48	
7	0.60	435	10.88	64.88	35.13	26-38	
8	0.30	430	10.75	75.63	24.38	18-28	
9	0.15	378	9.45	85.08	14.93	12-20)	
10	0.075	360	9.00	94.08	5.93	(4-10)	

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For Mecadez Core Technologies Private Limited

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Test Report
Stability of Mix

Project Name	Improvements to roads and drains from Baglur Main Road to Shivapura in Ward No.05
Client	Executive Engineer, Project Division Yalahanka
Job No	MCTPL/BBMP/Project-YNK/2017-2018/QR/03
Mix Type	Bituminous Concrete (BC)
Contractor	M/s KRIDL
Test Method	Specification for Road & Bridge Works, MORT&H, Revision V.
Location	Bay
Material	Bituminous Concrete mix
Sample No	1
Date	28-May-2018

Sl. No.	Description	Unit	Test 1	Requirements as per MORT&H
1	Marshal Stability	KN	9.6	9 KN (min)
2	Marshal Flow	mm	3.52	2 – 4 mm
3	Percent of Air Voids in mix	%	4.2	3 – 6 %
4	Percent of Voids in Mineral Aggregates filled with Bitumen	%	74	65 – 75 %
5	Density	g/cc	2.22	2.22 g/cc

Note:

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